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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,741	12/26/2000	John O. Limb	1875.0830001	4263

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EXAMINER	
JUNTIMA, NITTAYA	
ART UNIT	**PAPER NUMBER**
2663	9

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/748,741	Applicant(s) LIMB ET AL.	
	Examiner Nittaya Juntima	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *paper nos. 6 and 8*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

- the status of the cited U.S patent applications on pages 5 and 10 should be updated.

Appropriate correction is required.

Claim Objections

2. Claims 2, 5, 9, 16, 18-19, and 24-25 are objected to because of the following informalities:

- in claims 2 and 9, ll 4, "transmission" should be changed to "transmissions;"
- in claim 5, ll 5, "transmission" should be changed to "transmissions;"
- in claim 16, ll 3, "group" should be changed to "groups;"
- in claims 18, 19, 24, and 25, ll 2, "comprise" should be changed to "comprises;"

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1-5, 8-12, 15-16,** and **20-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimwood et al. (USPN 6,459,703 B1) in view of Shimizu (USPN 4,926,420).

Per **claim 1**, as shown in Fig. 1, Grimwood et al. teach ***a central controller*** (CMTS 10, col. 7, ll 19-col. 8, ll 1-2), ***a first group of remote devices*** (DOCSIS 1.2 modems 26-32, or advanced PHY modems, col. 3, ll 49-64, see also col. 4, ll 42-54), ***a first protocol*** (DOCSIS 1.2, col. 3, ll 49-64), ***a second group of remote devices*** (DOCSIS 1.0 modems 22-24), ***a second protocol*** (DOCSIS 1.0, col. 2, ll 22-25), identifying ***transmissions*** (bandwidth requests) from the first group and the second groups of remote devices (SID is used identify bandwidth requests from each modem, col. 9, ll 23-34 and 55-58).

Grimwood et al fail to teach routing transmission from the first group of remote devices to a first processor operating in accordance with the first protocol within the central controller and routing transmission from the second group of remote devices to a second processor in accordance with the second protocol within the central controller.

However, in an analogous art shown in Figs. 5 and 10, Shimizu teaches routing transmissions (packet signals) from a first group of remote devices (inherent devices in LAN 31) to a first processor (LLC data processor 51) operating in accordance with the first protocol (LAN) within the central controller (TE 33) and routing transmissions (packet signals) from the second group of remote devices (inherent devices in ISDN 32) to a second processor (ISDN data processor 52) in accordance with the second protocol (ISDN) within the central controller (TE 33). See col. 7, ll 10-15, 19-22, and 35-37, and col. 8, ll 56-64.

Given the teaching of Shimizu, it would have been obvious to one skilled in the art to include routing transmission from the first group of remote devices to a first processor operating

in accordance with the first protocol within the central controller and routing transmission from the second group of remote devices to a second processor in accordance with the second protocol within the central controller into the teaching of Grimwood et al as recited in the claim. The suggestion/motivation to do so would have been to process the transmissions of the integrated system at a corresponding one of the processors as taught by Shimizu (Abstract, ll 12-19).

Per **claims 2** and **9**, Grimwood et al. teach embedding ***a first identifier*** (SIDs 76-150) in ***transmissions*** (bandwidth requests) from ***the first group of remote devices*** (DOCSIS 1.2 modems) and embedding ***a second identifier*** (SIDs 1-75) in ***transmissions*** (bandwidth requests) from ***the first group of remote devices*** (DOCSIS 1.0 modems), wherein transmissions from the first and second groups of devices are identified in accordance with the first and second identifiers (col. 8, ll 58-66, col. 9, ll 23-34 and 55-58, and col. 12, ll 15-17, and Fig. 4).

Per **claims 3**, **10**, and **21**,Grimwood et al. teach that the transmissions from the first and second groups of remote devices comprise bandwidth requests.

However, Grimmwood et al fail to explicitly teach that the bandwidth requests are transmitted in a request contention area.

It is well known in the art that the CMTS must schedule some of the mini slots on the upstream channel as contention slots for bandwidth requests. Therefore, it would have been obvious to one skilled in the art to include transmitting the bandwidth requests in a request contention area. The suggestion/motivation to do would have been to allow any cable modem to communicate with the CMTS its bandwidth requirement.

Per **claims 4** and **11**, Grimwood et al teach transmitting ***bandwidth grants*** (grants in MAP message) to the first and second group of remote devices in response to requests for bandwidth (col. 8, ll 58-66 and col. 12, ll 15-17, 38-42, and 61-66).

Per **claims 5** and **12**, Grimwood et al teach assigning ***one or more time slots*** (mini slots) during which first group and second group of remote devices may transmit information to the central controller (CMTS 10 in Fig. 1) (col. 11, ll 35-39 and col. 12, 15-17, 38-42, and 61-66).

Grimwood et al. fail to explicitly teach that the central controller (CMTS 10) must identify transmissions (bursts) from the first and second groups of remote devices in accordance with the assigned time slots (mini slots). However, since Grimwood et al teach the MAP messages are generated for each logical channel containing SIDs and minislot assignment (col. 11, ll 35-39 and col. 12, ll 15-17 and 63-66) and the devices sending the bursts according to their minislot assignment (col. 13, ll 7-53). It would have been obvious to one skilled in the art to include that the central controller identifies transmissions from the first and second groups of remote devices in accordance with the assigned time slots into the teaching of Grimwood et al. as recited in the claim. The suggestion/motivation to do so would have been to verify whether the MAP messages have been properly communicated to the devices requesting bandwidth.

Claim 8 is a method claim containing similar limitations to method claim 1 and is rejected under the same reason set forth in the rejection of claim 1 with the addition that a cable modem termination system, cable modems, a proprietary protocol, and DOCSIS protocol in claim 8 correspond to a central controller, remote devices, a first protocol, and a second protocol in claim 1, respectively.

Per **claim 15**, as shown in Fig. 1, Grimwood et al. teach ***a plurality of remote devices*** (modems 22-32), ***a first group of remote devices*** (DOCSIS 1.2 modems 26-32, or advanced PHY modems, col. 3, ll 49-64, see also col. 4, ll 42-54), ***a first protocol*** (DOCSIS 1.2, col. 3, ll 49-64), ***a local host*** (CMTS 10, col. 7, ll 19-col. 8, ll 1-2), ***a second group of remote devices*** (DOCSIS 1.0 modems 22-24), ***a second protocol*** (DOCSIS 1.0, col. 2, ll 22-25). Grimwood et al. further teaches identifying transmissions (bandwidth requests) from the first group and the second groups of remote devices (SID is used identify bandwidth requests from each modem, col. 9, ll 23-34 and 55-58).

Grimwood et al fail to teach a protocol processor for identifying transmissions from the first and second groups of devices and routing transmission from the first group of remote devices to a first processor operating in accordance with the first protocol within the central controller and routing transmission from the second group of remote devices to a second processor in accordance with the second protocol within the central controller.

However, in an analogous art shown in Figs. 5 and 10, Shimizu teaches ***a protocol processor*** (FID discriminator 59 and SA detector 60) for identifying transmissions from first and second groups of devices (col. 8, ll 28-51) and routing transmissions (packet signals) from a first group of remote devices (inherent devices in LAN 31) to a first processor (LLC data processor 51) operating in accordance with the first protocol (LAN) within the central controller (TE 33) and routing transmissions (packet signals) from the second group of remote devices (inherent devices in ISDN 32) to a second processor (ISDN data processor 52) in accordance with the second protocol (ISDN) within the central controller (TE 33). See col. 7, ll 10-15, 19-22, and 35-37, and col. 8, ll 56-64.

Given the teaching of Shimizu, it would have been obvious to one skilled in the art to modify the teaching of Grimwood et al. such that a protocol processor for identifying transmissions from first and second groups of devices and routing transmission from the first group of remote devices to a first processor operating in accordance with the first protocol within the central controller and routing transmission from the second group of remote devices to a second processor in accordance with the second protocol within the central controller into the teaching of Grimwood et al would be included as recited in the claim. The suggestion/motivation to do so would have been to process the transmissions of the integrated system at a corresponding one of the processors as taught by Shimizu (Abstract, ll 12-19).

Per **claims 16** and **22**, Grimwood et al. teach that the local host (CMTS 10 in Fig. 1) further comprises a central processor for scheduling transmission from the first and second groups of

remote devices (CMTS must have a processor for processing scheduling and generating MAP messages used for minislot assignment for each modem, col. 7, ll 36-37, 49-66 and col. 9, ll 47-51).

Claim 20 is a cable television system claim containing similar limitations to system claim 15 and is rejected under the same reason set forth in the rejection of claim 15 with the addition that cable modems, a cable modem termination system, a proprietary protocol, DOCSIS protocol in claim 15 correspond to remote devices, a local host, and a first protocol, and second protocol in claim 15, respectively.

5. **Claims 6-7, 13-14, 17-19,** and **23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimwood et al. (USPN 6,459,703 B1) in view of Shimizu (USPN 4,926,420), and further in view of Vogel et al. (USPN 6,751,230 B1).

Per **claims 6** and **13**, the combined teaching of Grimwood et al. and Shimizu fails to teach creating a first multicast group and a second multicast group, and transmitting groups messages from the central controller to the first and second groups of remote devices in accordance with the first and second multicast groups.

As shown in Fig. 1, Vogel et al. teach creating ***a first multicast group*** comprising a first group of remote devices (multicast group with modified MAC multicast address having multiple modems 28 assigned to, col. 5, ll 42-52, 65-col. 6, ll 1-9), creating ***a second multicast group*** comprising a second group of remote devices (multicast group with the MAC multicast address in DOCSIS compliant form having multiple modems 28 assigned to, col. 5, ll 42-45, 60-65), and transmitting group messages from a central controller (CMTS 30) to the first and second groups of devices in accordance with the first and second multicast groups (col. 6, ll 14-29).

Given the teaching of Vogel et al, it would have been obvious to modify the combined teaching of Grimwood et al. and incorporate creating a first multicast group and a second multicast group, and transmitting groups messages from the central controller to the first and second groups of remote devices in accordance with the first and second multicast groups. The suggestion/motivation to do so would have been to enable the central controller (CMTS) to communicate with a particular group of devices by sending only a single targeted message instead of large number of unicast messages as taught by Vogel et al. (col. 6, ll 48-58).

Per **claims** 7 and **14**, Grimwood et al. fail to teach receiving communications for the first and second groups of devices in accordance with addresses of the first and second devices, routing communications for the first and second groups to the first processor and second processor, respectively, within a central controller, and transmitting processed communications to addressed remote devices.

In an analogous art, Shimizu teaches routing communications (packet signal) for the first (devices in LAN 31) and second (device in ISDN 32) groups to the first processor (51) and second processor (52), respectively, within a central controller (TE33) (Figs. 5 and 10, col. 6, ll 15-21, col. 8, ll 22-26 and 40-51).

Vogel et al. teach receiving communications for groups of devices in accordance with addresses of the devices (data from computer 10 in Fig. 1 to CPE 14 via corresponding modems 28 must be received in accordance with MAC addresses of modems 28, col. 1, ll 63-col. 2, ll 1, 39-51, and col. 5, ll 60-65) and transmitting processed communications to addressed remote devices (modulated data must be transmitted to the addressed modems 28, col. 1, ll 63- col. 2, ll 1, 39-51, and col. 5, ll 60-65).

Given the teaching of Vogel et al. and Shimizu, it would have been obvious to one skilled in the art to modify the teaching of Grimwood to include receiving communications for the first and second groups of devices in accordance with addresses of the first and second devices, routing communications for the first and second groups to the first processor and second processor, respectively, within a central controller, and transmitting processed communications to addressed remote devices as recited in the claim. The suggestion/motivation to do so would have been to provide transmission in the downstream direction as taught by Vogel et al. (col. 1, ll

63-col. 1, ll 1) and to process the transmissions of the integrated system at a corresponding one of the processors as taught by Shimizu (Abstract, ll 12-19).

Per **claims 17-18**, and **23-25**, the combined teaching of Grimwood et al. and Shimizu fails to teach an upstream demodulator and a downstream modulator.

As shown in Fig. 1, Vogel et al. teach an upstream demodulator (a demodulation circuit DEMOD) and a downstream modulator (a modulation circuit MOD) (col. 1, ll 63-col. 2, ll 1-8).

Given the teaching of Vogel et al., it would have been obvious to one skilled in the art to include an upstream demodulator and a downstream modulator into the combined teaching of Grimwood et al. and Shimizu. The suggestion/motivation to do so would have been to provide an appropriate demodulation and modulation to the data transmitted upstream and downstream to/from the local host (CMTS) as taught by Vogel et al. (col. 1, ll 63-col. 2, ll 1-8).

Per **claim 19**, Grimwood et al. teach embedding ***service identifiers*** (SIDs 76-150) in each ***upstream bandwidth requests*** (bandwidth requests), ***a first identifier*** (SIDs 76-150), ***a second identifier*** (SIDs 1-75) (col. 8, ll 58-66, col. 9, ll 23-34 and 55-58, and col. 12, ll 15-17, and Fig. 4).

However, the combined teaching of Grimwood et al. and Shimizu does not teach that each of the remote devices comprises a media access controller.

Vogel et al teach that each of the remote devices (modems 28 in Fig. 1) comprises a media access controller (a MAC controller must be included to filter the MAC address, col. 2, ll 39-42).

Therefore, it would have been obvious to one skilled in the art to include in each of the remote devices a media access controller as recited in the claim. The motivation/suggestion to

do so would have been to enable the remote devices to match the MAC destination address against addresses stored in them as taught by Vogel et al. (col. 2, ll 39-42 and 46-49).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 703-306-4821. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nittaya Juntima
June 29, 2004

ANDY LEE
PATENT EXAMINER